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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/589,103	08/10/2006	Luca Toncelli	SAIC 22.706 (100788-00120)	5787
26304 7590 11/18/2009 KATTEN MUCHIN ROSENMAN LLP 575 MADISON AVENUE NEW YORK, NY 10022-2585			EXAMINER KENNEDY, TIMOTHY J	
			ART UNIT 1791	PAPER NUMBER
			MAIL DATE 11/18/2009	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/589,103	Applicant(s) TONCELLI, LUCA	
	Examiner TIMOTHY KENNEDY	Art Unit 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 August 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4,5,9,10 and 12-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 4, 5, 9, 10, 12-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>8/12/09</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. By way of the amendment filed 8/6/2009: claims 1-3, 6-8, and 11 are cancelled, claims 4 and 5 are amended, and the remainder were previously presented.

Claim Objections

2. The objection to claim 11 is withdrawn, since claim 11 has been cancelled.

Claim Rejections - 35 USC § 112

3. The rejection of claims 1, 2, 4, 5, and 10 under 35 USC 112, second paragraph has been withdrawn.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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6. Claims 9 and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toncelli (EP 0786325: already of record), in view of Brown (U.S. Patent 2,388,824: already of record). Regarding claim 1, Toncelli teaches:

7. Mixing stone materials of predetermined particle size with a binder consisting of organic resins to produce a mix (Figure 1 part 26, Abstract, column 5, lines 18-20)

8. Distributing the mix inside a tray mould to form a mix layer (Figure 1 part 30, Abstract, column 5 lines 18-23)

9. Vacuum vibro-compacting the mix layer to obtain a compacted sheet (column 6, lines 7-14)

10. Hardening the binder by heating in an oven in order to obtain the finished products (Figure 1 part F and column 6, lines 15-21)

11. Toncelli does not teach:

12. Using electromagnetic radiofrequency waves having a frequency of less than 300 MHz to dielectrically preheat the compacted sheet to a temperature where catalysis of the binder starts

13. In the same field of endeavor Brown teaches preheating, using a high frequency electric field, resins before curing to ensure that the entirety of the mass is at a certain temperature so that the proper cure state can be achieved (left column, page 1, lines 20-41). Brown also teaches that the frequency and intensity of the dielectric preheating should be determined by the nature and bulk of the material, as well as allowing enough time for the temperature to be raised to the curing point (left column, page 2, lines 14-25)

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14. However Brown is silent as to what frequency is used for the preheating, but the frequency is seen as a result effective variable. Depending on the preheating temperature needed and the type of material being heated one having ordinary skill in the art would be able to pick the proper frequency, knowing based on Brown the importance of using high frequency waves to preheat a curable material.

15. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to determine a proper frequency and temperature as taught by Brown, using the Toncelli process, since the frequency variable is seen as result effective variable in the claimed process. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

16. Regarding claim 12, Toncelli teaches:

17. Mixing in a first station stone materials of predetermined particle size with a binder consisting of organic resins to produce a mix (Figure 1 part 26, Abstract, column 5, lines 18-20)

18. Distributing in a second station the mix inside a tray mould to form a mix layer (Figure 1 part 30, Abstract, column 5 lines 18-23)

19. Vacuum vibro-compacting in a third station the mix layer to obtain a compacted sheet (column 6, lines 7-14)

20. Hardening in a final station the binder by heating in an oven in order to obtain the finished products (Figure 1 part F and column 6, lines 15-21)

21. Toncelli does not teach:

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22. Using electromagnetic radiofrequency waves having a frequency of less than 300 MHz in an intermediate station to dielectrically preheat the compacted sheet to a temperature where catalysis of the binder starts

23. As seen with regards to claim 9, the combination of Toncelli and Brown teach the claimed preheating step.

24. With regards to its location of this processing step, one having ordinary skill in the art would know that the preheating station would be placed between the vacuum vibro-compaction and oven stations, as taught by Brown.

25. Regarding claim 13:

26. See remarks regarding claim 12.

27. Regarding claim 14, Brown for the previously stated reasons teach:

28. Step (c) is performed using means to generate electromagnetic waves having a frequency of between 25 and 35 MHz in the intermediate station.

29. See remarks regarding the Brown reference with regards to claim 9.

30. Claims 4 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toncelli and Brown as applied to claim 9 above, and further in view of Hedstrom (DE 2309183, with Derwent Abstract: already of record). Regarding claim 4:

31. Wherein the end of said intermediate preheating step, the compacted sheet reaches a temperature lower than the temperature at which catalysis of the binder starts and preferably ranging of between 75°C and 78°C.

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32. As previously discussed Brown teaches dielectric preheating (page 1, lines 20-41), but does not state heating to a temperature below the curing temperature.

33. In the same field of endeavor Hedstrom teaches preheating curable glue to a temperature below its curing temperature so as to remove trapped solvents in the glue. This shortens the total processing time, thus saving money.

34. However both Brown and Hedstrom are silent as to the temperature used. But as previously discussed the frequency and temperature used in dielectric heating are result effective variables, as shown by Brown. Depending on the preheating temperature needed and the type of material being heated one having ordinary skill in the art would be able to pick the proper frequency, knowing based on Brown the importance of using high frequency waves to preheat a curable material. Finally, depending on the type of binder and catalyst that is used in the mixture, one having ordinary skill in the art would be able to determine a temperature below the curing temperature so as to improve the overall process, as shown by Hedstrom.

35. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to determine a proper frequency and temperature for the preheating step as motivated by Hedstrom, using the Toncelli and Brown process, since these variables are seen as result effective variables in the claimed process. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

36. Regarding claim 10:

37. See remarks regarding claim 4.

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38. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Toncelli and Brown as applied to claim 9 above, and further in view of Toncelli (WO 03/089189, herein after referred to as Toncelli WO). Regarding claim 5, Toncelli and Brown do not teach:

39. A mix which contains granulates of the expanded type.

40. In the same field of endeavor Toncelli WO teaches the use of expanded clay in the mixture (page 6, lines 16-21).

41. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the expanded granualtes as taught by Toncelli WO, using the previous process of Toncelli and Brown since doing so would allow for good vibration damping capacity and lower the weight of the final product (page 6, lines 20-21)

Response to Arguments

42. Applicant's arguments filed 8/6/2009 have been fully considered but they are not persuasive.

43. Regarding Brown teaching away:

44. From MPEP 2145.X.D.1:

45. A prior art reference that “teaches away” from the claimed invention is a significant factor to be considered in determining obviousness; however, “the nature of the teaching is highly relevant and must be weighed in substance. A known or obvious composition does not become patentable simply because it has been described as somewhat inferior to some other product for the same use.” In re Gurley, 27 F.3d 551,

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554, 31 USPQ2d 1130, 1132 (Fed. Cir. 1994) (Claims were directed to an epoxy resin based printed circuit material. A prior art reference disclosed a polyester-imide resin based printed circuit material, and taught that although epoxy resin based materials have acceptable stability and some degree of flexibility, they are inferior to polyester-imide resin based materials. The court held the claims would have been obvious over the prior art because the reference taught epoxy resin based material was useful for applicant's purpose, applicant did not distinguish the claimed epoxy from the prior art epoxy, and applicant asserted no discovery beyond what was known to the art.).

46. Furthermore, "the prior art's mere disclosure of more than one alternative does not constitute a teaching away from any of these alternatives because such disclosure does not criticize, discredit, or otherwise discourage the solution claimed...." *In re Fulton*, 391 F.3d 1195, 1201, 73 USPQ2d 1141, 1146 (Fed. Cir. 2004).

47. The Examiner disagrees that Brown teaches away. Brown teaches dielectric preheating, with proper motivation. Furthermore, Applicant argues that Brown preheating would be tantamount to preheating between steps (b) and (c) in claim 9. The Examiner is unable to see this logic. Brown teaches preheating the material, then further curing the material. This is exactly what occurs in steps (d) and (e) of claim 9.

48. It is noted that the features upon which applicant relies (i.e., separate locations for preheating and curing) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

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49. This results in a piecemeal argument against Brown, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). One having ordinary skill in the art would understand that Brown is used for teaching dielectric preheating, and viewed in combination with Toncelli, one would understand that you would preheat the material so as to avoid undue thermal strain and uneven temperature distribution prior to placing the material in the oven to cure.

50. Regarding the argument that one skilled in the art would not combine Brown with Toncelli:

51. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Brown gives explicit motivation to dielectrically preheat a material before continuing on with the final curing: "In either case, the result is that there are strains set up in the material, and this is particularly true of many materials which are such poor heat conductors that it takes a long time to bring all portions thereof to a uniform temperature when heated by conventional methods: (left column, page 1, lines 31-37). One having ordinary skill in

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the art would take this motivation and apply it to Toncelli, since Toncelli desires to cure a large volume of material in an oven, and as per Brown the skilled artisan would know that preheating would lessen the chance of induced strain and poor heat distribution.

52. In response to applicant's argument that Brown is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention.

See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Brown teaches a method of dielectrically preheating, and then curing a resin material to produce a desired product. The Examiner fails to see how one would not look to Brown when dealing with curing resin material (even with aggregate mixed in), with a desire to preheat. Thus Brown and Toncelli are in the same field of endeavor.

53. Finally regarding Brown and the references silence to a frequency used:

54. The Examiner has shown above how and why the teachings of Brown teach that the frequency used is a result effective variable. "The electric field should be of a frequency and intensity which are, respectively, determined by the nature and bulk of the material 1. The field should also be determined with due regard for the length of the operating cycle and should be applied to the work for a period of time sufficient to raise the temperature of the material 1 to its curing point" (left column, page 2, lines 14-25). Brown also teaches about the preheating: "When the material is either approaching or has already been brought to the curing temperature..." (right column, page 1, lines 22-24).

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55. From this one skilled in the art would understand that the preheating frequency used is dependent on: the material worked upon, the shape of the material, the volume of the material, the length of the preheating cycle, and the desired preheating temperature. Therefore Brown explicitly teaches that the preheating frequency used is a known result effective variable in the art.

Conclusion

56. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

57. U.S. Patents: 3192291, 3586743, 4311655, 4597922

58. U.S. PGPub 2005/0022914

59. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TIMOTHY KENNEDY whose telephone number is (571)

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270-7068. The examiner can normally be reached on Monday to Friday 9:00am to 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Del Sole can be reached on (571) 272-1130. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

tjk

/Joseph S. Del Sole/
Supervisory Patent Examiner, Art Unit 1791